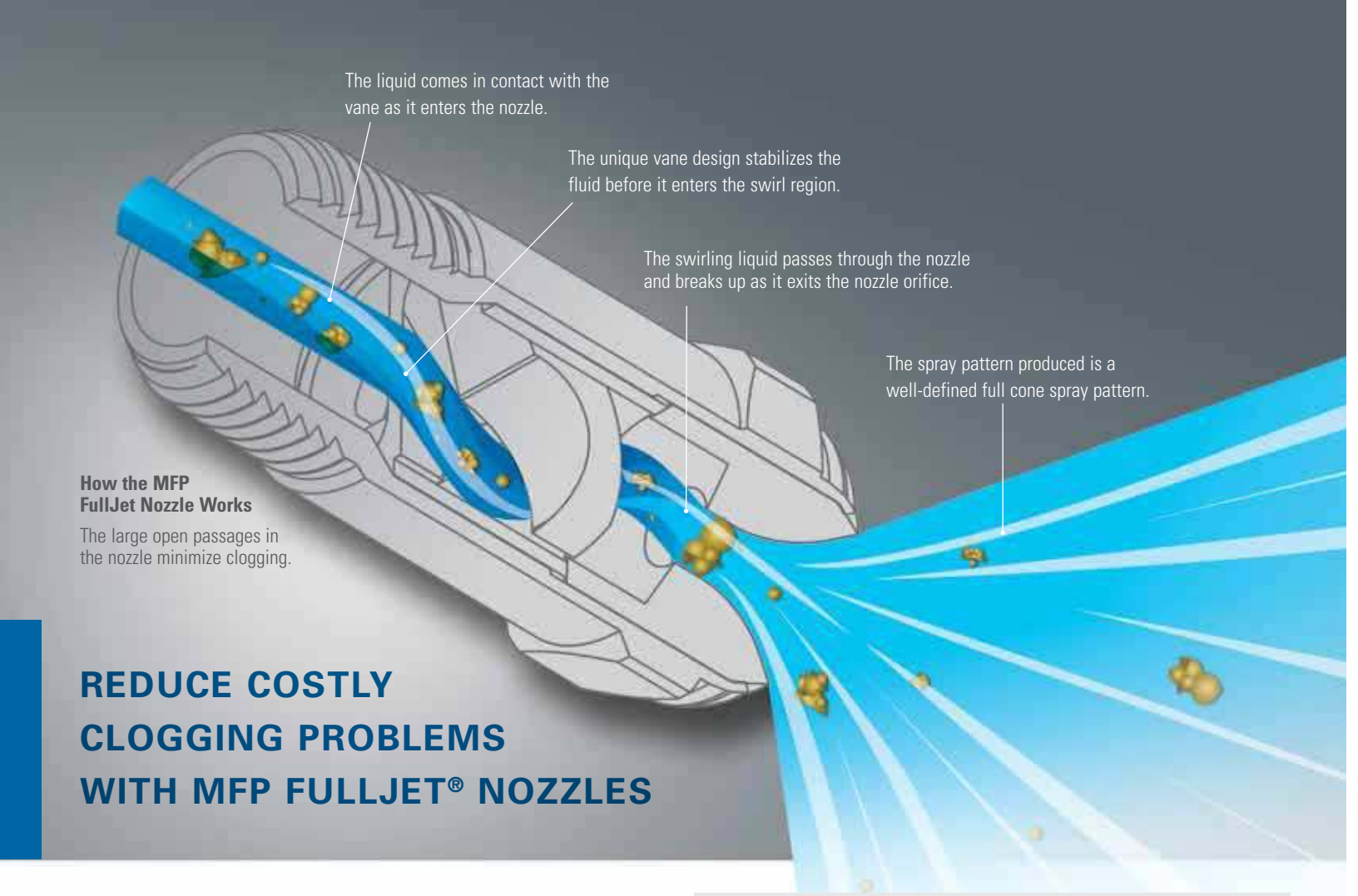
MAXIMUM FREE PASSAGE FULLJET® SPRAY NOZZLES

UNIQUE DESIGN MINIMIZES CLOGGING, PROVIDES SUPERIOR PERFORMANCE

Spraying Systems Co.®
Experts in Spray Technology



How the MFP FullJet Nozzle Works

The large open passages in the nozzle minimize clogging.

REDUCE COSTLY CLOGGING PROBLEMS WITH MFP FULLJET® NOZZLES

UNIQUE DESIGN PROVIDES LARGEST FREE PASSAGE OF ANY FULL CONE NOZZLE

If you're using a conventional full cone nozzle or a competitive maximum free passage nozzle and are challenged by clogging problems, it's time to make a change. Our MFP FullJet nozzles feature a unique vane design and provide the largest free passage available in a full cone nozzle.

You'll experience benefits like:

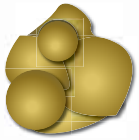
- Minimized risk of clogging even when using debris-filled or recirculated liquid
- Reduced unscheduled downtime due to clogged nozzles
- Improved product/process quality by eliminating problems caused by distorted spray patterns due to contaminants trapped in the nozzle

COMPARING FREE PASSAGE BETWEEN MFP FULLJET NOZZLES AND STANDARD FULLJET NOZZLES

Particulates that are 30 to 75% larger in diameter can pass through MFP FullJet nozzles without clogging.

Largest particle to pass through standard full cone nozzles

Largest particle to pass through maximum free passage full cone nozzles



MFP FullJet Nozzle

- More uniform distribution throughout the spray
- True full cone spray pattern

Competitor A Large Free Passage Nozzle

- Center of spray is light
- Outer edges of spray are heavy
- Similar appearance to a hollow cone spray pattern

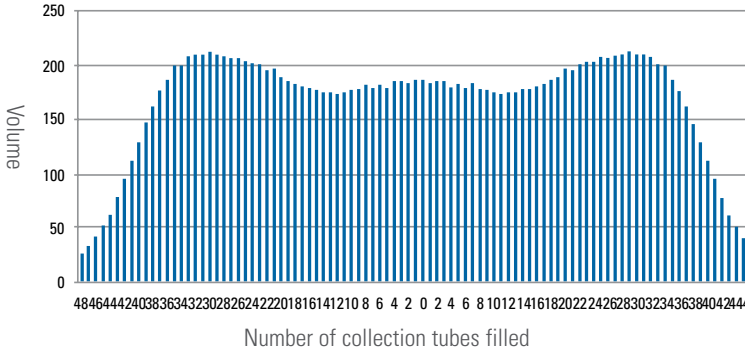
UNIQUE DESIGN PRODUCES A MORE UNIFORM SPRAY PATTERN FOR SUPERIOR PERFORMANCE

SPRAY PATTERN UNIFORMITY ACROSS THE ENTIRE SPRAY COVERAGE AREA IS ESSENTIAL TO OPTIMIZING APPLICATION RESULTS

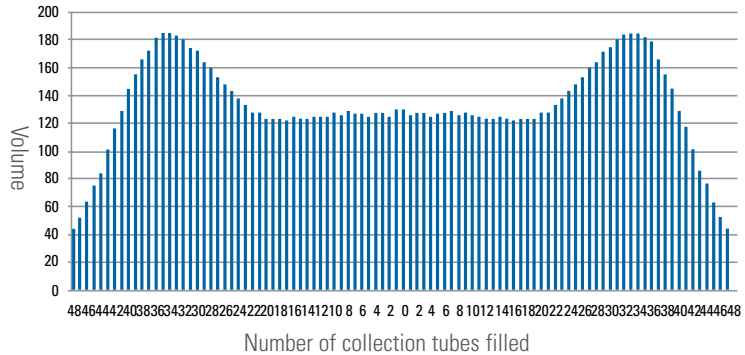
Our MFP FullJet® nozzles eliminate coverage problems associated with other large free passage nozzles. Competitive nozzles produce a spray pattern more like a hollow cone pattern with heavy edges and light centers. MFP FullJet nozzles produce a true full cone pattern with consistent coverage throughout the entire spray to ensure better cleaning, cooling, quenching, dust suppression and more.

Side-by-side testing shows the performance differences between our MFP FullJet nozzles and competitive nozzles. Nozzles tested are of identical size, capacity and spray angle (90°) and were spraying at 20 psig (1.38 bar). Spray pattern photography (above) shows the visible differences in the pattern and distribution data (right), collected while the nozzles were spraying, quantifies the performance differences.

MFP FullJet Nozzle



Competitor A Large Free Passage Nozzle



A BROAD RANGE OF CAPACITIES, CONNECTIONS AND SPRAY ANGLES ENSURES YOU'LL FIND THE PERFORMANCE YOU NEED

NEW 1/8" AND 1/4" SIZES FOR LOW FLOW OPERATIONS

- 1/8" and 1/4" threaded male connections. Choice of brass, 303 stainless steel or 316 stainless steel. Vane material same as body material

Plus:

- 3/8" to 1" threaded male and female connections with 316 stainless steel vane and choice of brass or 316 stainless steel bodies
- 1-1/4" to 3" threaded male and female connections in 316 stainless steel
- Spray angles: 60°, 90° or 115°
- Flow rates up to 705 gpm (2670 lpm)
- Operating pressures up to 80 psi (6 bar)

MFP FULLJET® NOZZLES ARE IDEAL FOR:

- Applications plagued by clogging problems
- Washdown of mist eliminator blades, filter pads and distribution plates
- Washing coal, sand and other minerals
- Process cooling
- Gas cooling and flue gas desulfurization
- Blanching machines
- Dust suppression
- Fire protection of off-shore platforms, storage tanks and hazardous loading areas
- Flooding/deluge fire protection systems
- Foam control
- Aerating waste water

ORDERING INFORMATION

MAXIMUM FREE PASSAGE (MFP) FULLJET NOZZLE

Inlet Conn.	Nozzle Type	–	Material Code	Spray Angle	Capacity Size

Example

3/4	HHMFP	–	SS	90	70

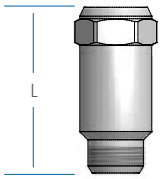
BSPT connections require the addition of a "B" prior to the inlet connection. No material code required for brass. Use SS as material code for 316 stainless steel MFP nozzles.

PERFORMANCE DATA

Inlet Conn. (in.)	Nozzle Type		Capacity Size	Approx. Free Passage Dia. in. (mm)	Flow Rate Capacity gallons per minute (liters per minute)				Spray Angle (°)					
									60° Series		90° Series		115° Series	
	HMFP	HHMFP			10 psi (0.7 bar)	20 psi (1.5 bar)	40 psi (3 bar)	80 psi (6 bar)	10 psi (0.7 bar)	40 psi (3 bar)	10 psi (0.7 bar)	40 psi (3 bar)	10 psi (0.7 bar)	40 psi (3 bar)
1/8		●	1.7	0.047 (1.2)	0.17 (0.7)	0.23 (0.9)	0.30 (1.2)	0.41 (1.5)	63	60	93	88	115	100
		●	3.5	0.063 (1.6)	0.35 (1.3)	0.47 (1.8)	0.63 (2.5)	0.84 (3.2)	63	60	93	88	115	100
		●	4.3	0.078 (2.0)	0.43 (1.6)	0.58 (2.3)	0.77 (3.0)	1.03 (3.9)	63	60	93	88	115	100
1/4		●	7	0.094 (2.4)	0.70 (2.7)	0.94 (3.7)	1.25 (4.9)	1.68 (6.3)	63	60	93	88	115	100
		●	12	0.125 (3.2)	1.2 (4.6)	1.61 (6.3)	2.15 (8.4)	2.87 (10.9)	63	60	93	88	115	100
3/8	●	●	14	.125 (3.2)	1.4 (5.3)	1.8 (7.2)	2.4 (9.5)	3.2 (12.6)	60	62	90	84	115	100
	●	●	22	.156 (4.0)	2.2 (8.4)	2.9 (11.4)	3.8 (15.0)	5.1 (19.8)	60	62	90	84	115	100
	●	●	32	.188 (4.8)	3.2 (12.2)	4.2 (16.5)	5.6 (22)	7.4 (29)	60	62	90	84	115	100
1/2	●	●	32	.188 (4.8)	3.2 (12.2)	4.2 (16.5)	5.6 (22)	7.4 (29)	60	62	90	84	115	100
	●	●	51	.219 (5.5)	5.1 (19.4)	6.7 (26)	8.9 (35)	11.7 (46)	60	62	90	84	115	100
	●	●	57	.250 (6.4)	5.7 (22)	7.5 (29)	9.9 (39)	13.1 (51)	60	62	90	84	115	100
3/4	●	●	70	.281 (7.1)	7.0 (27)	9.2 (36)	12.2 (48)	16.1 (63)	60	62	90	84	115	100
	●	●	84	.313 (7.9)	8.4 (32)	11.1 (43)	14.6 (57)	19.3 (76)	60	62	90	84	115	100
	●	●	100	.344 (8.7)	10.0 (38)	13.2 (52)	17.4 (68)	23 (90)	60	62	90	84	115	100
	●	●	120	.375 (9.5)	12.0 (46)	15.8 (62)	21 (82)	28 (108)	60	62	90	84	115	100
1	●	●	120	.375 (9.5)	12.0 (46)	15.8 (62)	21 (82)	28 (108)	60	62	90	84	115	100
	●	●	150	.406 (10.3)	15.0 (57)	19.5 (76)	25 (99)	33 (129)	60	62	90	88	115	105
	●	●	170	.437 (11.1)	17.0 (65)	22 (86)	29 (113)	37 (146)	60	62	90	88	115	105
1-1/4	●	●	170	.437 (11.1)	17.0 (65)	22 (86)	29 (113)	37 (146)	60	62	90	88	115	105
	●	●	200	.469 (11.9)	20 (76)	26 (102)	34 (132)	44 (172)	60	62	90	88	115	105
	●	●	220	.500 (12.7)	22 (84)	29 (112)	37 (146)	48 (189)	60	62	90	88	115	105
	●	●	240	.531 (13.5)	24 (91)	31 (122)	41 (159)	53 (207)	60	62	90	88	115	105
	●	●	260	.562 (14.3)	26 (99)	34 (132)	44 (172)	57 (224)	60	62	90	88	115	105
1-1/2	●	●	240	.54 (13.7)	24 (91)	32 (126)	43 (170)	58 (227)	60	59	89	89	108	104
	●	●	260	.558 (14.2)	26 (99)	35 (137)	47 (184)	63 (246)	62	61	90	92	113	103
	●	●	280	.571 (14.5)	28 (107)	38 (147)	50 (198)	68 (265)	62	62	89	91	113	107
	●	●	300	.59 (15.0)	30 (114)	42 (164)	58 (226)	80 (313)	63	62	93	92	114	108
	●	●	350	.63 (16.0)	35 (133)	48 (191)	67 (264)	93 (365)	63	63	91	93	117	113
	●	●	400	.66 (16.8)	40 (153)	55 (218)	77 (302)	106 (418)	64	64	92	93	120	115
	●	●	450	.7 (17.8)	45 (172)	62 (245)	86 (339)	119 (470)	65	63	92	91	117	116
2	●	●	500	.76 (19.3)	50 (191)	70 (274)	97 (382)	135 (533)	59	58	90	86	103	98
	●	●	600	.82 (20.8)	60 (229)	84 (329)	116 (459)	162 (639)	61	58	89	86	108	102
	●	●	700	.86 (21.8)	70 (267)	98 (384)	136 (535)	189 (746)	62	57	92	91	114	106
	●	●	800	.97 (24.6)	80 (305)	111 (439)	155 (612)	216 (852)	60	57	93	89	113	111
2-1/2	●	●	1000	1 (25.4)	100 (381)	137 (539)	188 (739)	258 (1013)	61	58	92	90	112	112
	●	●	1200	1.21 (30.7)	120 (457)	165 (647)	226 (887)	309 (1216)	63	59	94	91	110	108
	●	●	1400	1.36 (34.5)	140 (534)	192 (755)	263 (1035)	361 (1419)	62	60	93	92	113	111
	●	●	1700	1.41 (35.8)	170 (648)	233 (917)	320 (1257)	438 (1723)	62	60	89	88	112	110
3	●	●	1800	1.55 (25.4)	180 (686)	242 (949)	325 (1274)	436 (1712)	61	59	92	92	112	108
	●	●	2000	1.73 (43.9)	200 (762)	269 (1054)	361 (1416)	485 (1902)	63	61	93	91	112	109
	●	●	2400	2.2 (55.9)	240 (914)	322 (1265)	433 (1699)	582 (2282)	62	60	95	93	114	111

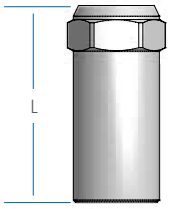
Maximum free passage diameter is the maximum diameter as listed of foreign matter that can pass through the nozzle without clogging.

DIMENSIONS AND WEIGHTS



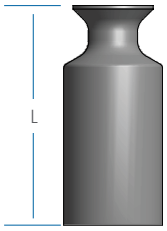
HHMFP (M) FULLJET® 1/8", 1/4"

Inlet Conn. (in.)	Spray Angle	Capacity Size	L in. (mm)	Hex. in.	Net Weight oz. (kg)
1/8	60°, 90°, 115°	1.7, 3.5, 4.3	0.70 (17.8)	7/16	0.38 (0.01)
1/4	60°, 90°, 115°	7, 12	0.87 (22.1)	9/16	0.75 (0.02)



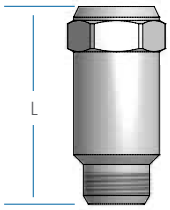
HMFP (F) FULLJET – 3/8", 1/2", 3/4", 1", 1-1/4" AND 1-1/2" SIZES

Inlet Conn. (in.)	Spray Angle	Capacity Size	L in. (mm)	Hex. in.	Net Weight oz. (kg)
3/8	60°, 90°, 115°	14, 22	1.460 (37.1)	13/16	2.4 (0.07)
	60°, 90°, 115°	32	1.701 (43.2)	13/16	2.5 (0.07)
1/2	60°, 90°, 115°	32	1.770 (45.0)	1	4.5 (0.13)
	60°, 90°, 115°	51, 57	2.120 (53.9)	1	4.6 (0.13)
3/4	60°, 90°, 115°	70	2.400 (61.0)	1-1/4	8.9 (0.25)
	60°, 90°, 115°	84	2.637 (67.0)	1-3/8	12.6 (0.36)
	60°, 90°, 115°	100, 120	3.070 (78.0)	1-3/8	13.3 (0.38)
1	60°, 90°, 115°	120, 150, 170	3.250 (82.6)	1-3/4	22.5 (0.64)
1-1/4	60°, 90°, 115°	170, 200, 220, 240, 260	3.750 (95.3)	2	30.5 (0.86)
1-1/2	60°, 90°, 115°	240, 260, 280, 300, 350, 400, 450	4.380 (111.3)	2-3/16	35.3 (1.0)



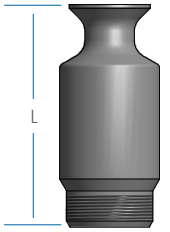
HMFP (F) FULLJET – 2", 2-1/2" AND 3" SIZES

Inlet Conn. (in.)	Spray Angle	Capacity Size	L in. (mm)	Dia. in.	Net Weight oz. (kg)
2	60°, 90°, 115°	500, 600, 700, 800	6.528 (165.8)	2-3/4	52.9 (1.5)
2-1/2	60°, 90°, 115°	1000, 1200, 1400, 1700	8.000 (203.2)	3-13/16	93.5 (2.65)
3	60°, 90°, 115°	1800, 2000, 2400	9.440 (239.8)	4-3/16	114.6 (3.25)



HHMFP (M) FULLJET – 3/8", 1/2", 3/4", 1", 1-1/4" AND 1-1/2" SIZES

Inlet Conn. (in.)	Spray Angle	Capacity Size	L in. (mm)	Hex. in.	Net Weight oz. (kg)
3/8	60°, 90°, 115°	14, 22	1.000 (25.4)	11/16	1.4 (0.04)
	60°, 90°, 115°	32	1.701 (43.2)	3/4	2 (0.06)
1/2	60°, 90°, 115°	32	1.225 (31.1)	7/8	2.4 (0.07)
	60°, 90°, 115°	51, 57	2.198 (55.8)	1	4.9 (0.14)
3/4	60°, 90°, 115°	70	1.810 (46.0)	1-1/8	5 (0.14)
	60°, 90°, 115°	84	2.713 (68.9)	1-3/8	11.5 (0.33)
	60°, 90°, 115°	100, 120	3.100 (78.7)	1-3/8	12.1 (0.34)
1	60°, 90°, 115°	120, 150, 170	3.250 (82.6)	1-3/4	22.5 (0.64)
1-1/4	60°, 90°, 115°	170, 200, 220, 240, 260	3.750 (95.3)	2	32 (0.91)
1-1/2	60°, 90°, 115°	240, 260, 280, 300, 350, 400, 450	4.380 (111.3)	2-3/16	36.7 (1.04)



HHMFP (M) FULLJET – 2", 2-1/2" AND 3" SIZES

Inlet Conn. (in.)	Spray Angle	Capacity Size	L in. (mm)	Dia. in.	Net Weight oz. (kg)
2	60°, 90°, 115°	500, 600, 700, 800	6.528 (165.8)	2-3/4	52.9 (1.5)
2-1/2	60°, 90°, 115°	1000, 1200, 1400, 1700	8.000 (203.2)	3-13/16	93.5 (2.65)
3	60°, 90°, 115°	1800, 2000, 2400	9.440 (239.8)	4-3/16	114.6 (3.25)

Based on largest/heaviest version of each type.

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Experts in Spray Technology

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ISO 9001:2015 14001:2015 CERTIFIED

Bulletin No. 703C Printed in the U.S.A.